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Our Reference: TMA-105-B

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: John J. Borzym
Serial Number: 10/762,430
Filing Date: January 22, 2004
Examiner/Art Group Unit: Maurina T. Rachuba/3723
Title: SUPPORTED SHEAR WITH REVERSIBLE DRIVE
AND METHOD OF OPERATING SAME

RESUBMITTED APPEAL BRIEF

MAIL STOP APPEAL BRIEF-PATENTS
Commissioner for Patents
PO Box 1450
Alexandria, VA 22313-1450

Sir:

This is Appellant's Brief on Appeal pursuant to 37 C.F.R. § 1.192 from the final rejection of all claims, as set forth in the Office Action mailed July 7, 2006 and remedies the non-compliance issues raised in the Patent Office communication mailed on January 18, 2007.

REAL PARTY IN INTEREST

The Applicant John J. Borzym is the real party in interest.

RELATED APPEALS AND INTERFERENCES

There are no directly related appeals or interferences. However, Appellant is the applicant in Serial No. 10/310,194, also on appeal.

STATUS OF CLAIMS

Claims 5 and 6 stand rejected under 35 U.S.C. § 112, second paragraph. This is a simple matter of wording and can be fully resolved by entry of the amendment submitted herewith.

Claims 1, 3-6, 10 and 11 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Carmichael et al. 4,003,279 in view of Ward 3,874,122.

Application Serial No. 10/762,430
Appeal Brief Dated February 19, 2007

Page 2

There are no allowed claims.

STATUS OF AMENDMENTS

An amendment submitted August 21, 2006 dealing with both the § 112 and § 103(a) rejections was not entered. That portion of the amendment dealing only with the § 112 rejection is resubmitted herewith. The Examiner indicated in the advisory action mailed September 1, 2006 that this same amendment would resolve the § 112 rejection.

SUMMARY OF CLAIMED SUBJECT MATTER

The claimed invention is a drive system for a "supported shear" i.e., a device used to precisely shear metal tubing by causing relative movement between a first tool 42 and a second, adjacent tool 18. The movement of tool 42 is "orbital" and bidirectional. ¶¶ 0019, 0023, 0030. The term "supported" arises out of the fact that the shear requires the presence of a mandrel 32 within the tube at the shear area; Specification ¶¶ 0002, 0003, 0006, 0019, 0021, 0022 through 0024; see also Figs. 1-6.

The specific drive system addressed by the claims comprises first and second hydraulic cylinders 62 and 64 driving at least one rack 60 in opposite directions. The rack is engaged by a pinion 58 which is directly connected to the moveable tooling 42 to cause the orbital movement; Specification paragraphs ¶¶ 0026-0030, 0039, 0043. See also drawing Fig. 2. In the second embodiment, Drawing Fig. 8, the hydraulic cylinders drive a pair of racks 65, 66, which trap the pinion between them to cause bidirectional movement of the orbital (moveable) tooling 42. ¶ 0036.

Claim 10 is generic. Claims 1 and 11 specify the two hydraulic cylinders 62, 64; claim 3 defines the first and second racks 65 and 66. Claim 5 adds the limitation of varying the power level of the hydraulic drive during translation of the rack. Support in the Specification is found at ¶¶ 0035 and 0036.

Claim 6 introduces a further limitation wherein the total linear displacement of the rack is at least approximately equal to one revolution of the pinion 58. Support in the specification is found at ¶ 0029.

Application Serial No. 10/762,430
Appeal Brief Dated February 19, 2007

Page 3

Supported shears are readily distinguishable from other types of tube cutting devices using guillotine blades and saws. The supported shear removes no material from the tube and, therefore, produces no scrap; see Specification ¶ 0005.

GROUND OF REJECTION TO BE REVIEWED ON APPEAL

1. The rejection of claims 1, 3-6, 10 and 11 under 35 U.S.C. § 103(a) based on Carmichael et al., 4,003,279 in view of Ward 3,874,122 as set forth in the Office Action of July 7, 2006 and the Advisory Action of January 9, 2007.

ARGUMENT

- A. The Rejection Under § 103 Fails to Set Forth a Specific Teaching in the References or a Motivation for Combining the References to Meet the Limitations of the Claims. It is Based on Hindsight and Should be Reversed.**

All of claims 1, 3, 4 and 11 specifically recite a pair of hydraulic cylinders used to power the removable tool of a supported shear through an orbital path. The preambles of these claims all give the claims life and meaning by placing the invention in the "supported shear" field.

The omnibus rejection based on § 103 is set forth in very broad brush terms; i.e., the Examiner correctly states that the Carmichael et al. patent discloses a supported shear and further correctly states that the Carmichael et al. does not disclose a drive system using hydraulic cylinders, a pinion engaging either one or two oppositely moving racks, a means for varying the power level of the cylinders and/or any teaching relating the total displacement of a rack to one revolution of a pinion. Carmichael et al. is, in fact, a chain drive system. The Examiner then postulates that it would be obvious to make up all of the shortcomings of Carmichael et al. by substituting components from the Ward patent for the Carmichael et al. chain drive. The totality of the explanation is as follows:

Application Serial No. 10/762,430
Appeal Brief Dated February 19, 2007

Page 4

'122, fig. 2, and column 2, lines 39 through column 3, lines 12, teaches the use of two hydraulic cylinders to alternatively (sic) drive first and second rack (sic) in two opposite directions to rotate a pinion in opposite directions, to reciprocate a moving structure, the power level being variable. It would have been obvious to one of ordinary skill to have provided '279 with the linear drive of '122 in combination with other structure, such as the eccentric (9, 33) to reciprocate (oscillate) the eccentric (9,33) disclosed by 279 in opposite directions, to actuate the moveable tooling to orbit in opposite directions.

It is plain to see from this quote that the examiner proposes to simply rebuild the Carmichael et al. device with the benefit of hindsight and makes no attempt whatsoever to show how the references provide a teaching for the combination or a motivation to combine the references to produce the claimed result. The rejection fails to comply with the requirements of *Graham v. Deere*, 383 U.S. 1 (1966) in omitting to address the level of skill in the art at the time the invention was made. It further omits to identify and set forth some "teaching" suggestion or reason" to combine the references as required by the law of the Court of Appeals for the Federal Circuit in numerous cases, including *Ashland Oil, Inc. v. Delta Resins and Refracs., Inc.*, 776 F.2d 281; 227 USPQ 657 (Fed. Cir. 1985); *Gambro Ludia, A.B. v. Baxter Health Care Corp.*, 110 F.3d 1573; 42 USPQ2d 1378 (Fed. Cir. 1997). Instead, the examiner simply uses applicant's specification as an instruction book on how to reconstruct the Carmichael et al. reference using components from a totally unrelated system. This is an impermissible approach; see for example, *Panduit Corp. v. Dennison Mfg. Company*, 810 F.2d 1561; 1 USPQ2d 1593 (Fed. Cir. 1987); *Sensorics, Inc. v. Aerasonic Corp.*, 81 F.3d 1566; 38 USPQ2d 50-51 (Fed. Cir. 1996); (when prior art references require selective combination to render a subsequent invention obvious, the examiner must give some reason for the combination other than the hindsight gleaned from the disclosure of the patent; i.e., something in the prior art as a whole must suggest the desirability and thus the obviousness of making the combination; citing *Uniroyal, Inc. v. Rudkin-Wiley Corp.*, 837 F.2d 1044; 5 USPQ2d 1434) (Fed. Cir. 1988).

The rejection based on § 103 is clearly in error as to claims 3, 4, 10 and 11 and the Board is respectfully requested to reverse the Examiner as to these claims.

Application Serial No. 10/762,430
Appeal Brief Dated February 19, 2007

Page 5

Similar arguments can be made with respect to the more narrowly defined subject matter of claims 5 and 6; i.e., varying the power level of the hydraulic drive during translation of the rack and relating the total linear displacement of a rack to one revolution of the pinion. Appellant finds nothing in either of the references which discusses varying the power level during translation of the rack. Similarly, Appellant finds nothing in either of the references clearly relating one rack displacement to one revolution of the pinion which drives the moveable tooling. These refinements do not “jump out” of the references themselves; and have to be read into the references by first gaining an understanding of the mechanics and the objectives of Applicant’s claimed invention. Again, this is an impermissible hindsight rejection.

The failure of the prior art runs even deeper. In the paper filed August 21, 2006, Appellant advised the Examiner that Carmichael et al. does not disclose the mechanism for alternately driving the moveable tooling in opposite directions through an orbital path relative to the stationary tooling. The section of Carmichael et al. cited by the Examiner for disclosure of this feature; to wit column 4, lines 24-31, merely reads: “As a further alternative, the orbital shearing movement could be completed in only 180°, giving a faster cycling time but additional complexity as the die then needs to move in opposite directions to get back to the starting position from the orbital shearing position for alternate cycles”. Carmichael et al. discloses nothing whatsoever for achieving the stated result or overcoming the problem of “additional complexity”. With no disclosure of structure for achieving the objective, this can hardly be characterized as a reference which renders Applicant’s claimed invention “obvious”, with or without supplementary teaching from Ward. In fact, the quoted passage from Carmichael et al. must be taken as a teaching away from Applicant’s invention because the reference to “additional complexity” is clearly negative in character. Prior art must be enabling; *U.S. v. Bert Adams*, 148 USPQ 479 (1966).

B. Ward is Non-Analogous Art.

The Ward patent describes a grinding machine using hydraulically powered racks 14, 15 to drive a pinion 16 disposed between them. The patent is in class 51. The problem solved by

Application Serial No. 10/762,430
Appeal Brief Dated February 19, 2007

Page 6

Ward is to lathe opposing faces of an object without having to reorient the object after lathing one side.

As a result of Appellant having raised the issue of Ward as non-analogous art, the Examiner responded in the Advisory Action of September 1, 2006 to the effect that both Applicant's tube shearing device and Ward's lathe fell into the category of "machine tools", citing *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). Applicant submits that the Examiner's resort to the broad category of "machine tools" to justify this combination of references is wholly unrealistic and does not begin to comply with the law.

In the first place *In re Oetiker* reiterates the law set forth above to the effect that the prior art must set forth some teaching, reason, suggestion or motivation to make the specific combination relied on by the Examiner; see the concurring opinion of Judge Nies at 24 USPQ2d, p. 1446. The principal opinion further states that any reference relied on by an examiner must be either "in the field of the applicant's endeavor" or "reasonably pertinent to the particular problem with which the inventor was concerned". *Supra* at p. 1445. The combination of elements from non-analogous sources, in a manner that reconstructs the applicant's invention only with the benefit of hindsight, is insufficient on its face. It is worthy of note that the ultimate conclusion in this decision was a determination that the references on which the Examiner and the Board of Appeals relied were *improperly combined* and the rejection was reversed.

The result of *Oetiker* must obtain here. Ward is not in the field of Applicant's endeavor; i.e., tube cutting, and there is virtually no room for debate on that point. Secondly, Ward is not "reasonably pertinent" to the particular problem which Appellant faced (making a supported shear operate more advantageously); rather, Ward is related to issues involving the lathing or grinding of planar components. There is simply no demonstrable relationship whatsoever between Ward and the technology or problems of the present invention. By any standard Ward is a non-analogous reference and never should have been used in a § 103 rejection of Appellant's claims.

Application Serial No. 10/762,430
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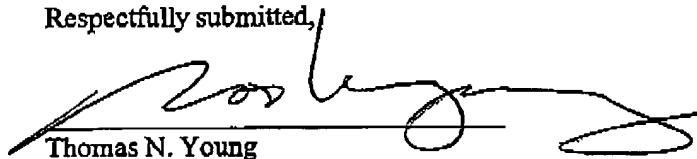
Page 7

CONCLUSION

The final rejection of claims 1, 3-6, 10 and 11 under 35 U.S.C. § 103(a) does not comport with the law as it has existed for decades. The rejection is based on a combination of references using impermissible hindsight and does not provide the required showing of a teaching, suggestion, or motivation in the references themselves for combining them. The Ward patent is non-analogous art. The final rejection of all claims should be reversed.

Appellant waives oral argument.

Respectfully submitted,



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Application Serial No. 10/762,430
Appeal Brief Dated February 19, 2007

Page 8

CLAIMS APPENDIX

Listing of Claims:

1. In a supported shear of the type which shears tube stock by lateral displacement of adjacent lengths of stock along a shear plane extending orthogonally through the stock:
a mandrel to be placed within the stock;
stationary tooling for receiving and holding said stock;
movable tooling adjacent the stationary tooling for receiving said stock; and
means including first and second hydraulic cylinders for alternately driving said movable tooling in opposite directions through an orbital path relative to the stationary tooling.
2. (Cancelled) Apparatus as defined in claim 1 wherein the means for driving includes first and second hydraulic cylinders.
3. Apparatus as defined in claim 1 wherein said means for driving further comprises:
a pinion connected to said movable tooling;
a first rack engaged with the pinion and mounted for linear translation to rotate said pinion in a first direction; and
a second rack engaged with the pinion and mounted for linear translation to rotate said pinion in a second direction.
4. Apparatus as defined in claim 3 further comprising:
power means for causing simultaneous linear translation of said first and second rack in opposite direction.
5. Apparatus as defined in claim 4 further including means for varying the power level of said hydraulic power means during translation of said rack.

Application Serial No. 10/762,430
Appeal Brief Dated February 19, 2007

Page 9

6. Apparatus as defined in claim 3 wherein the total linear displacement of said first rack is at least approximately equal to one revolution of said drive shaft .

7. (Cancelled) Apparatus as defined in claim 1 wherein:
said stock is tubular; and
said shear further comprises a mandrel extensible into said stock in the location of the shear plane to maintain the shape thereof during a shearing operation.

8. (Cancelled) For use in combination with a bladeless shear for linear stock which shear comprises a stock-receiving ram having an eccentrically driven wheel disposed therein, a wheel drive comprising:
a drive shaft connected to said wheel;
a pinion connected to said shaft for rotation therewith;
first and second racks engaging said pinion and linearly translatable to rotate the pinion in respective first and second opposite directions; and
power means for translating said racks.

9. (Cancelled) In a bladeless shear device of the type having first and second tools aligned with a work piece axis and means for causing orbital motion of one of the tools relative to the other:
an actuator having a linearly translating drive component; and
means for converting the linear translation of the drive component into orbital motion of said one tool.

10. A supported shear for the bladeless shearing of tube stock disposed on a mandrel comprising:
a first, fixed die for holding the stock;
a second, movable die for holding the stock immediately axially adjacent the first fixed die to define a shear plane between the two dies; and

Application Serial No. 10/762,430
Appeal Brief Dated February 19, 2007

Page 10

means for alternately driving the second, movable die in opposite directions through an orbital path.

11. A shear as defined in claim 10, wherein the means for driving comprises first and second hydraulic cylinders operatively connected to drive the second, movable die.

Application Serial No. 10/762,430
Appeal Brief Dated February 19, 2007

Page 11

EVIDENCE APPENDIX

No evidence is appended to the Substitute Appeal Brief.

Application Serial No. 10/762,430
Appeal Brief Dated February 19, 2007

Page 12

RELATED PROCEEDINGS APPENDIX

There are no related proceedings.

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Title: SUPPORTED SHEAR WITH REVERSIBLE DRIVE
AND METHOD OF OPERATING SAME

PROPOSED AMENDMENT

MAIL STOP: APPEAL BRIEF PATENTS
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Sir:

If any charges or fees must be paid in connection with the following communication, they may be paid out of our Deposit Account No. 25-0115.

Please make the amendments shown in the attached papers in this application in the:



Amendments to the Claims.

Listing of the Claims:

1. In a supported shear of the type which shears tube stock by lateral displacement of adjacent lengths of stock along a shear plane extending orthogonally through the stock:
a mandrel to be placed within the stock;
stationary tooling for receiving and holding said stock;
movable tooling adjacent the stationary tooling for receiving said stock; and
means including first and second hydraulic cylinders for alternately driving said movable tooling in opposite directions through an orbital path relative to the stationary tooling.
2. (Cancelled) Apparatus as defined in claim 1 wherein the means for driving includes first and second hydraulic cylinders.
3. Apparatus as defined in claim 1 wherein said means for driving further comprises:
a pinion connected to said movable tooling;
a first rack engaged with the pinion and mounted for linear translation to rotate said pinion in a first direction; and
a second rack engaged with the pinion and mounted for linear translation to rotate said pinion in a second direction.
4. (Currently Amended) Apparatus as defined in claim 3 further comprising:
a hydraulic power means for causing simultaneous linear translation of said first and second rack in opposite direction.
5. Apparatus as defined in claim 4 further including means for varying the power level of said hydraulic power means during translation of said rack.
6. (Currently Amended) Apparatus as defined in claim 3 wherein the total linear displacement of said first rack is at least approximately equal to one revolution of said drive-shaft pinion.
7. (Cancelled) Apparatus as defined in claim 1 wherein:

said stock is tubular; and
said shear further comprises a mandrel extensible into said stock in the location of the shear plane to maintain the shape thereof during a shearing operation.

8. (Cancelled) For use in combination with a bladeless shear for linear stock which shear comprises a stock-receiving ram having an eccentrically driven wheel disposed therein, a wheel drive comprising:

- a drive shaft connected to said wheel;
- a pinion connected to said shaft for rotation therewith;
- first and second racks engaging said pinion and linearly translatable to rotate the pinion in respective first and second opposite directions; and
- power means for translating said racks.

9. (Cancelled) In a bladeless shear device of the type having first and second tools aligned with a work piece axis and means for causing orbital motion of one of the tools relative to the other:

- an actuator having a linearly translating drive component; and
- means for converting the linear translation of the drive component into orbital motion of said one tool.

10. A supported shear for the bladeless shearing of tube stock disposed on a mandrel comprising:

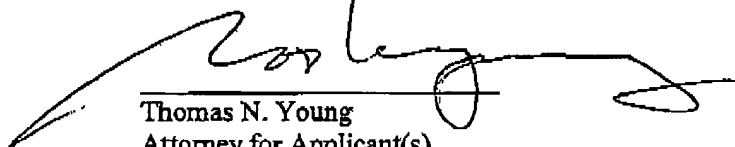
- a first, fixed die for holding the stock;
- a second, movable die for holding the stock immediately axially adjacent the first fixed die to define a shear plane between the two dies; and
- means for alternately driving the second, movable die in opposite directions through an orbital path.

11. A shear as defined in claim 10, wherein the means for driving comprises first and second hydraulic cylinders operatively connected to drive the second, movable die.

REMARKS

This Amendment is proposed along with Appellant's Brief on Appeal for the Purpose of eliminating the basis for the rejections based on 35 U.S.C. § 112.

Respectfully submitted



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Title: SUPPORTED SHEAR WITH REVERSIBLE DRIVE
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CERTIFICATE OF FACSIMILE TRANSMISSION

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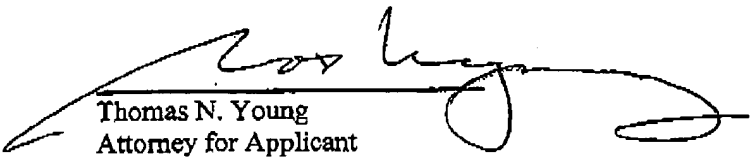
Sir:

Transmitted with this document are an Appeal Brief and Proposed Amendment in the above-identified application.

X No fee is due.

X Please charge any deficiency or credit any excess in the enclosed fees to
Deposit Account Number 25-0115.

I hereby certify that this correspondence was transmitted via Facsimile to (571) 273-8300 on
February 19, 2007.


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